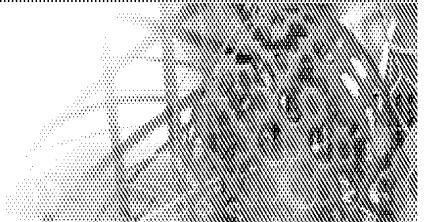


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TYPE	EXAMINER	DATE	EXAMINER	EXAMINER	EXAMINER

## Title: Preparation of polyoxyalkylene-alpha, omega-dicarboxylic acids

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## Abstract

A process for the preparation of separating out a polyoxyalkylene-alpha, omega-dicarboxylic acid by reacting the corresponding polyoxyalkylene glycol with a stable free radical nitroxide in the presence of a NOx-generating compound and optionally, an oxidant and/or a solvent, at a temperature in the range of from 0 DEG C to 100 DEG C.

Comments

Views

## Claim

1, the method of preparation following formula polyoxyalkylene -  $\alpha$ ,  $\omega$  - dicarboxylic acid

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Wherein R / be hydrogen or methyl or their mix (in different molecules), n is the integer by 0-5000, this method includes that corresponding polyoxyalkylene glycol and the stable nitroxide free radical that has a following posture in the presence of the compound and oxidant that produce NO<sub>x</sub>, react in 0-100 DEG C temperature range, isolate polyoxyalkylene -  $\alpha$ ,  $\omega$  - dicarboxylic acid thereafter,

Wherein (1) (a) R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>With R<sub>4</sub>Each be the alkyl that alkyl, aryl or heteroatom substituted contain a 1-15 carbon atom, (b) R<sub>5</sub>With R<sub>6</sub>(i) each is alkyl (if the R who contains a 1-15 carbon atom<sub>1</sub>- R<sub>6</sub>Be not the alkyl entirely), or be a 1-15 carbon atom

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Description

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## Claim

Replace the alkyl, wherein the substituting group is hydrogen, cyanic acid, CONH<sub>2</sub>, OCOCH, O-COC<sub>2</sub>H<sub>5</sub>, carbonyl, alkenyl, wherein the double key not with nitroxide part conjugation, or - COOR, wherein R be alkyl or aryl or (ii) common constitute contain two at least carbon atoms partly until two heteroatom O or N's ring, or (2)

The part with

The part can be the aryl respectively.

2, the method of claim 1, wherein stable nitroxide free radical is like the following formula

## Claim

Wherein R<sub>7</sub>, R<sub>8</sub>, R<sub>9</sub> With R<sub>10</sub> In each is the alkyl that alkyl, aryl or heteroatom substituted contain a 1-15 carbon atom, R<sub>11</sub> With R<sub>12</sub> In each is alkyl, hydrogen, aryl or substituted heteroatom.

3, the method of claim 2, wherein stable nitroxide free radical be be selected from 2,2,6,6- tetramethyl - piperidine - 1- oxygen base, 4- pivaloyl amido - 2,2,6,6- tetramethyl piperidine - 1- oxygen base, 4- alkoxy - 2,2,6,6- tetramethyl - piperidine - 1- oxygen base and their mixture.

4, any one method among the claim 1-3, wherein said production NOx's compound is a nitric acid.

5, any one method among the claim 1-4,5mol% to 1000mol% is counted with the mole number of polyoxyalkylene glycol to the compound quantity scope that wherein produces NOx.

## Claim

6, any one method among the claim 1-5, wherein said polyoxyalkylene glycol contacts with said stable nitroxide free radical, then adds said production NOx's compound and said oxidant.

7, any one method among the claim 1-6, 1mol% to 500mol% is counted with the mole number of polyoxyalkylene glycol to wherein stable nitroxide free radical quantity.

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